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Journal of the Society of Arts.

FRIDAY, NOVEMBER 14, 1862.

NOTICE TO MEMBERS.

The One-Hundred-and-Ninth Session of the Society will commence on Wednesday, the 19th November, at 8 o'clock, when Sir THOMAS PHILLIPS, F.G.S., Chairman of the Council, will deliver the Opening Address. The Chair will be taken at Eight o'clock on the following Wednesday Evenings:—

1862. November	—	—	19	26	
„ December	3	10	17	—	—
1863. January	—	14	21	28	
„ February	4	11	18	25	
„ March	4	11	18	25	
„ April	—	8	15	22	29
„ May.....	6	13	20	27	
„ June.....	—	—	—	24*	

For the Meetings previous to Christmas, the following arrangements have been made:—

NOVEMBER 19.—Opening Address by Sir THOMAS PHILLIPS, F.G.S., Chairman of the Council. -

* * * On this evening the Medals which were awarded by the Council for Papers read at the Weekly Evening Meetings during the last Session, will be distributed.

NOVEMBER 26.—“On the Utilization of Peat, with reference more particularly to the Manufacture of Hydro-Carbon Oils.” By B. H. PAUL, Ph.D.

DECEMBER 3.—“On Thompson's Process of Boatbuilding by Machinery.” By D. PUSELEY. Illustrated by Models.

DECEMBER 10.—“On the Construction of Labourers' Cottages and Sanitary Building Appliances.” By JOHN TAYLOR, Jun., Architect. On this evening Major-General Tremenhoe will preside.

DECEMBER 17.—“On the Mines and Minerals of the United Kingdom.” By ROBERT HUNT, F.R.S., Keeper of Mining Records, Government School of Mines.

GENERAL INDEX.

A general Index to the first ten volumes of the *Journal* will shortly be published, which should be bound with the present volume. Members who desire to have copies are requested to apply to the Secretary before the 1st of December, in order that a sufficient number may be printed.

NOTICE TO INSTITUTIONS.

A limited number of copies of a pamphlet, by Mr. Henry Roberts, F.R.I.B.A., “On the Essentials of a Healthy Dwelling, and the Extension of its Benefits to the Labouring Population, with a Special Reference to the Promotion of that Object by H.R.H. the late Prince Consort,” has been placed at the disposal of the Council for distribution amongst the Institutions in Union. Any Institution desiring to have a copy should apply to the Secretary.

* The Annual General Meeting: the Chair will be taken at Four o'clock. No Visitors are admitted to this Meeting.

INTERNATIONAL EXHIBITION OF 1862.

REPORTS OF THE JURIES.

The Reports will be published in super royal octavo, to range with the one-volume Jury Reports of 1851. The price of the volume, bound in cloth, to Members of the Society of Arts, to Jurors, and Guarantors, is fixed at 10s.; to other persons, 15s. If bound in morocco, 7s. 6d. additional in each case.

The reports of each class are sold separately; for prices see advertisement.

INTERNATIONAL EXHIBITIONS.

The following letter has been addressed to the Secretary of the Society of Arts:—

SIR,—The queries proposed by the Society of Arts to the jurors, foreign and colonial commissioners, and principal exhibitors, at the International Exhibition, to elicit their opinions whether, in future International Exhibitions, the present system of awarding “medals” and “honourable mentions” should be abandoned, with or without a substitute, or should be maintained with or without alteration, were received by me, a juror of Class 29, “Educational Works and Appliances,” but I found it impossible to express, in that categorical form, an intelligible statement of my opinion.

I am of opinion that radical changes, extending far beyond the constitution, procedure, and awards of juries, must be agreed on before an International Exhibition can again be held with any fair chance of success; and in this letter I will endeavour to sketch out a few of the changes which appear to me to be necessary.

Before the Great Exhibition of 1851 was held, its authors—His Royal Highness the Prince Consort and the Society of Arts—announced that it was designed to be the first of a series of International Exhibitions to be held in London every fifth year; and her Majesty's Commissioners for that Exhibition held out public expectations that, if any surplus funds should be realised at its close, they would be available for the intended future Exhibitions. On this understanding, a sum of more than seventy thousand pounds was received from the public in voluntary subscriptions, and the Exhibition was held with enthusiastic popularity, and an amazing financial success.

The surplus actually realised—£186,436 18s. 6d.—was, however, so very much larger than anyone had anticipated as possible, that it seemed ridiculous to apprehend that a future Exhibition might find its expenditure greater than its receipts; and the advantages of resting such a popular undertaking in future entirely on voluntary support, rather than on an endowment, were thought to be so overpowering, that her Majesty's Commissioners, notwithstanding their previous announcements, thought it right to obtain a supplementary charter, which authorised them to apply their surplus to the promotion of Industrial Instruction, and they invested the whole sum together with a grant of (I think) £175,500 from Parliament, in the purchase of the South Kensington estate.

Looking back upon these transactions, and fully admitting that the Commissioners were justified at that time in taking powers to apply their surplus to an object not contemplated at first, one cannot doubt that, in equity, the first claim upon that estate is now for such assistance to future International Exhibitions as may be necessary in order to their being held; and that no scheme of industrial instruction, however excellent and urgently required, should be aided by the Commissioners of 1851

until the original claim for periodical exhibitions shall have been satisfied in full.

This opinion is widely entertained; and that the Commissioners of 1851 themselves regard their property as still applicable to the purposes of International Exhibitions is certainly to be inferred from their free grant of the present site to the uses of the Commissioners of 1862.

The question, then, to be immediately decided, is whether there is now any necessity for assistance from the commissioners of 1851 toward the establishment of periodical International Exhibitions: and this question cannot be answered in the negative.

The preservation of the existing building, which stands on their estate, is a necessary condition of future exhibitions; for, if that building be destroyed, it is idle to expect that a body of guarantors will again be found to incur the responsibility of providing funds for a new structure; or that a competent body of commissioners will again be found willing to accept the responsibilities which have been undertaken by Lord Granville and his colleagues, the Commissioners of 1862.

The building has cost (say) £400,000; it stands on the only possible site of future exhibitions, and is admirably suited for them; and yet no one is in a position to assure us that this costly structure will not be pulled to pieces in a few weeks, and sold as "old materials." We have heard of people stultifying themselves, but when did mortal ears hear of such a self-identification as will be effected by the people of this country if this wanton and extravagant destruction is perpetrated?

Let us understand the case. What are the circumstances that make this catastrophe possible? Pecuniary means are wanting to complete the building for permanent use, and to maintain it in repair till the next International Exhibition is held.

Apart from the ornamentation of the outside of the building, which may be effected gradually, according to existing plans, a sum of £100,000 may be necessary to complete it without the annexes. Assuming, what I shall presently examine, that this sum might be raised on the South Kensington estate, the point to be ascertained is whether we can agree upon a self-supporting plan for the use of the building in the intervals between one International Exhibition and another; for the Commissioners of 1851 cannot be expected to devote their trust funds to the completion of the building if it is only to be used during each tenth year, and is to be a costly inutility during all the intervening periods of nine years.

There has been a good deal of controversy respecting the length of interval that ought to occur between one exhibition and another. The original proposal was for five years. The French have held their great exhibitions generally about once in five or six years. Their last was held in 1855; and it has been stated that it was the Emperor's intention to have another in 1861 or 1862; but that he postponed it, to avoid interfering with ours. The Society of Arts has recently suggested ten years; and many persons are of opinion that the period ought to be considerably longer.

Now, surely, the existing exhibition itself demonstrates by its enormous extent, and great intrinsic superiority to its predecessors of London and Paris, that it was not held one day too soon. It is evident that, if it had been postponed but for a few years, its increase in size above its prototype of 1851 would have been so enormous, that no site in this metropolis could have contained it, no set of men could have managed it, and no one could have understood one half of it; and very many admirable improvements upon what was excellent in 1851 would have been unduly kept back from the knowledge and use of the world. As it is, does not every one feel that the Exhibition has been too big for the place, too large and unwieldy for the management of the Commissioners, for the eyes, understandings, and memories of the visitors, for the means of access, and for the roads and streets? Such a monster exhibition is generally felt to be too great a dis-

turbance of the normal habits of London to be repeated at very brief intervals; and yet, if the intervals be not very brief, its size, its excitements, its disturbing powers, when it occurs, and the difficulties of managing it, are immensely aggravated. From these considerations it seems to me that there is only one sound conclusion, viz., that in future we should have smaller exhibitions at shorter intervals.

That which is done only once in ten years is not likely to be done very well. The management of International Exhibitions is an undertaking of singular difficulty, in which experience, always valuable, is of especial value; but, when they occur at long intervals, with no intervening links of continuance, experienced officers cannot be found to undertake the management. A heterogeneous staff is therefore suddenly recruited from all parts of the world. Men, yesterday strangers, are to to-day brought into close and confidential relations; none knows his colleagues, his own place, or duties. Everything is hurried, and consequently there are much confusion, mismanagement, and profusion of expense. In like manner the "national" and "trade" "committees of advice," the colonial commissions, and the juries, are suddenly created in a haphazard fashion, and called upon to discharge unaccustomed duties of great difficulty and delicacy. They hastily grope their way to a knowledge of what is expected of them; as soon as the Exhibition is opened, the committees are superseded by the juries, and they, in their turn, after a brief interval, as soon as they have hastily made their awards, are disbanded without ceremony. There is no continuity between one Exhibition and another. The collections of the United Kingdom are exhibited without a sufficient selection and sifting; and, consequently, the rubbish which we exhibit is proportionately greater than the rubbish of foreign countries and the colonies, whose collections are generally selected with much care and skill. We want a better organisation.

Probably our two great Exhibitions of 1851 and 1862 were as well organised as the circumstances under which they were held would allow; but they partook sadly of the character of chaos; they were gigantic enterprises of Titanic force, admirable in the infancy of International Exhibitions, but unsuitable to their mature state. It will be inexcusable if a third time the whole of the arrangements are made spasmodically in a hurry.

Much smaller Exhibitions, of objects carefully selected on the sole ground of their having merit, at shorter intervals than ten years, and with links of continuance in the intervals, would be far more conducive to the interests of Arts, Manufactures, and Commerce; and I will state briefly some of the conditions under which, it appears to me, that such Exhibitions might, with advantage, be maintained.

Let us have done with chaos and let order appear. Let us have done with temporary buildings erected in haste, temporary commissions appointed at the eleventh hour, ephemeral committees and juries, officers "of sorts" brought together by tuck of drum.

We want (1st) in London a permanent Central Body, having branches in the great seats of industry. Let us call this permanent body—

"THE ALBERT INSTITUTE OF EXHIBITIONS, NATIONAL AND INTERNATIONAL."

This Institute and its branches might be established under the authority of the Crown by a Royal Charter, or under the authority of Parliament.

The central Institute might be a representative body, consisting of:—

The First Lord of the Treasury, the Lord President of the Council, the President and the Vice-President of the Board of Trade.

The Commissioners of 1851 and 1862.

The President and the Chairman of the Council of the Society of Arts. (The Society which originated the Exhibitions of 1851 and 1862, and which ob-

tained the Charter of Incorporation under which the Exhibition of 1862 is held.)

The Mayors of the United Kingdom.
The Presidents of the Chambers of Commerce.
The Presidents of Scientific Societies.
The Chairmen of all Local or Branch Boards for Exhibitions.
Representatives of organised industries.
Representatives of the Universities.
Representatives of the Colonies.

With power to add to themselves a limited number of experts; and to appoint an Executive Committee and such other committees as may be expedient.

We want (2nd) throughout the United Kingdom, permanent Local Bodies, Branches of the Institute—let us call them—

"THE ALBERT INSTITUTE—BRANCH."

The duties of the Central Institute would be:—

- (a). To maintain perpetually Exhibitions in their building at South Kensington. These Exhibitions would be various, of a special character, and limited extent; some held only for a few months, others perhaps during the whole interval between one International Exhibition and another. I need not particularise these minor Exhibitions, for every one who is familiar with these matters is aware that there are an almost infinite number of subjects connected with various branches of Arts, Manufactures and Commerce, which want to be illustrated more fully than is possible in a great International Exhibition.
- (b). To co-operate with the various Branches of the Institute in organising occasional or periodical Local Exhibitions of Arts and Manufactures in the great towns and seats of industry.
- (c). To promote and superintend the due representation of the industries of the United Kingdom and the Colonies in all International Exhibitions held in foreign countries; and
- (d). To hold our own International Exhibitions when our own turn comes round.

The duties of the Branch Institutes would be:—

- (a). To co-operate with the Central Institute in selecting objects for the Special Exhibitions.
- (b). To organise and manage their own Local Exhibitions.
- (c). To promote the due representation of the industries of their own localities in International Exhibitions held in foreign countries; and
- (d). To perform the duties of the "National" and "Trade" Committees of Advice, in reference to our own International Exhibitions.

The Institute might appoint a standing body of Jurors, including experts, representatives of each of the classes into which our future International Exhibitions are to be divided. These jurors would be paid by fees for their work done; and, being a permanent body, accustomed to act together according to known rules, and practised in their duties, might be trusted to pronounce judgments and to award medals for objects of special excellence.

Assuming that a great International Exhibition might be held every alternate year, either in England, or in France, or in Germany, in regular rotation, there would be one in London every sixth year; and there would be a variety of minor exhibitions throughout the intervening five years.

A permanent staff, of moderate extent, would, therefore, be constantly employed by the Institute; and its officers, becoming experienced in the constant management of exhibitions, and being reinforced, when necessary, by some of the similarly experienced officers of the Branch Institutes would be an admirable nucleus for the much larger establishments which would be requisite when the International Exhibitions came round.

These Great Exhibitions, the "applications for space"

being carefully sifted by the Branch Institutes under rules laid down by the Central Institute, might be confined within limits very much smaller than those of 1862.

The annexes being relinquished, and the space for refreshments and for passages being considerably enlarged, the remainder of the present building would be the available area; and into this area nothing whatever should be admitted which it would not be for the real interests of Arts, Manufactures, and Commerce that the public should have so special an opportunity to see.

The powers granted under her Majesty's charter to the commissioners for the existing Exhibition will expire when its affairs are wound up. The Commissioners of 1851 are so far a permanent body that they are charged with the application of the surplus of that year's Exhibition; and it is invested in the South Kensington estate, a permanent property, which must give rise to perpetual duties. Though this commission, however, is composed of eminent persons of high character and ability, whose co-operation would be exceedingly valuable, they could not undertake themselves to manage such an Institute as I have sketched; their functions would naturally and necessarily be merged in the representative body, the Albert Institute; and the South Kensington estate, purchased with the proceeds of the first International Exhibition, and therefore equitably subject to a charge for the wants of future International Exhibitions, would become the property of the Institute, and available for its objects.

I cannot pretend to give a clear view of the financial history and state of that property. It cost £327,000 about ten years ago.

The surplus of 1851 was stated to be £186,436 18s. 6d.; and the Commissioners received a parliamentary grant of about £170,000. The parliamentary grant was repaid partly in land, the site of the South Kensington Museum, which was transferred to the Committee of Council on Education, and partly in cash. The estate remaining with the Commissioners must now be worth a very much larger sum than £327,000. It has been completely "formed;" the roads and the sewers have been made; some hundreds of magnificent houses have been built; and the Horticultural Garden has been placed there. The estate is understood to be heavily mortgaged, but large portions remain to be built upon; and, if these could at once be realised, at their full value, there would certainly be more than sufficient funds with which the Exhibition building might be put into a condition suitable for permanent use, except mere ornamentation, which might be done by degrees.

In connection with this question of the immediate realisation of funds by dealing at once with the unappropriated land, the other questions which I have raised respecting the character and periodical recurrence of future Exhibitions are of the greatest moment.

If we are to have decennial repetitions of this year's enormous Exhibition, with its accompanying crowds, confusions, hubbubs, and blockades, and if during the intervening periods of nine years the building is to contain nothing attractive to the inhabitants of the neighbouring houses, we must expect not a rapid improvement, but a rapid depreciation, of the South Kensington property. But, if it were determined that the future Exhibitions should be reduced to manageable proportions, that the unsightly annexes should be removed, that the main building, at present unfinished, a mere carcass, should be completed with the ornamentation proposed, that suitable means of access should be provided so as to prevent the recurrence of blockades, and that exhibitions of interest and utility should constantly be held in the building, the value of the whole estate would be at once greatly augmented, and the impetus given to the application of the property to the purposes of building would be sufficient to raise its value to the point necessary for obtaining the one hundred thousand pounds which I have assumed to be immediately required.

The site of the western annexe and those portions of

the estate which connect that site with the Kensington-road, and those portions of the estate abutting on that road, which are not required for the proposed memorial "Albert Hall," might at once be disposed of for the building of houses of the very finest character that the metropolis can boast.

The value of the eastern annexe might also be realised in a manner that would add incalculably to the value of the whole neighbourhood. What is the great want of west London on the north and south sides of Hyde-park? A direct communication across the park. What incidents of the present Great Exhibition are most calculated to deteriorate the value of the adjoining property? The noise and confusion and blockading of the streets. This want would be supplied, and the causes of deterioration would be removed, if the site of the eastern annexe and the corresponding portion of the garden of Eden-lodge were sold to a railway company, who should make an underground railway from the Exhibition Building to the nearest point of the Metropolitan Underground Railway on the north side of the park; and if that company (paying in money for the site of the eastern annexe and the garden of Eden-lodge) should pay for the privilege of tunnelling under Hyde-park (not in money but in money's worth) by the construction of the much wanted sunken road for carriages along the line of the wall of Kensington-gardens, from the Bayswater-road to the Kensington-road. The railway would have its station at the road level, between the present entrances to the Exhibition and the Horticultural garden in the Exhibition-road; and this station would give access to the Exhibition and the Garden, and also (by an arch or a tunnel) to the western entrance of the South Kensington Museum. The railroad would dip under the annexe, under the garden of Eden-lodge, under the Kensington-road, and would pass under Hyde-park from south to north; and, as there would be neither smoke, nor steam, nor screams, the advantages of the communication by railway would be the greatest possible—and the disadvantages would be *nil*.

A branch of the Underground Railway ought also to be carried from west to east, under Hyde-park, under Hyde-park corner, under the Green-park, and under St. James's-park to Westminster.

It may be said that permission to carry a railway under Hyde-park has been already asked and refused. It may be so; and, while underground railways were still in the regions of theory, it was natural that such a request should be refused, but now that an underground railway has been received into the region of facts accomplished, we may be sure that public opinion will insist upon the adoption of this method of utilising the parks. An *underground* railway will interfere in no degree with their beauty and utility as parks, while it will afford a most effectual relief to the crowded thoroughfares in their neighbourhood.

By thus providing abundant access to the houses on the estate, to the Exhibition building, to the Horticultural garden, and to the South Kensington Museum, without crowds, confusion, or noise, an immense impetus would be given to the realisation of the property; and, if a sum sufficient for the initial expenses could not be thus entirely raised without loss of time, the balance might be procured on the security of the estate, either by a Parliamentary Loan, or by Debentures, or by a guarantee fund. All that would be necessary would be to provide for the initial expenses; because the proceeds of the special exhibitions held in every ordinary year in the building would be amply sufficient for the expenditure of ordinary years; and in each extraordinary year, when the Great International Exhibition was held, the cost of the building having been already defrayed, there must necessarily be a large surplus from the receipts, and this surplus would be available for the final extinction of the debt, for the ornamentation of the building, and, finally, for some well considered scheme of "Industrial Instruction,"

in accordance with the supplementary charter already alluded to.

The interests of Arts, Manufactures, and Commerce, the memory of our great Prince, and the honour of the country, forbid our entertaining the thought that we shall have no more International Exhibitions in London. In this letter I have endeavoured to direct attention to some of the conditions which seem to me to be necessary to enable us to have them.

I do not propose this scheme as a substitute for the intended National Memorial to the ever-memorable Prince, whose removal from this world we can never cease for ourselves to regret; but it is a scheme for a truly national memorial of him, and I venture to think such a memorial as he might have approved.

I am, &c.,

HARRY CHESTER.

63, Rutland-gate, London,
October 24, 1862.

DOUBLE SCREW STEAMERS.

It will be remembered that a paper "On Constructing and Manœuvring Screw Steamers," by Commander T. E. Symonds, R.N., was published in the *Journal* for the 25th July last, page 563. This paper was read at a meeting of the United Service Institution, and pointed out the advantages to be derived by the application of double screws under the quarters of a vessel. The new iron-clad navy of the Federal States is said to number amongst its vessels many thus fitted, this arrangement enabling the hull of the vessel itself to be turned in any required direction with rapidity and ease.

Mr. Dudgeon, the engineer and shipbuilder, has been the first to give a practical illustration of the advantages possessed by two screw propellers over a single one. The *Flora*, of 400 tons, double screw propeller, was built at Blackwall, from designs by Mr. Dudgeon, and on Friday, the 7th inst., an official trial of her speed and capabilities of manœuvring took place upon the river between Tilbury and the Mouse Light. Shortly before twelve o'clock she left Tilbury-wharf, having on board Mr. Dinen, R.N., Admiralty Inspector of Steam Machinery; Commander Symonds, R.N.; Captain Selwyn, R.N., inventor of the cylindrical system of laying the transatlantic telegraph cable; Captain Crookshank, Mr. Dudgeon, Mr. W. Dudgeon, and a party of officers in the naval service and mercantile marine, as well as many well-known yachtsmen; also several gentlemen connected with her Majesty's dockyards, and with the Swedish and Russian marine.

The dimensions of the *Flora* are as follows:—Length in load line, 150ft.; beam, 22ft. 6in.; depth in hold, 13ft. 6in.; nominal horse-power, 120; indicated horse-power, 400; two screws of three blades each, 7ft. in diameter, and having a pitch of 14ft. 6in.

On the day of trial she drew 7ft. water aft and 5ft. 5in. forward. Her displacement was 350 tons, and the area of immersed midships section 130 feet. She is rigged as a fore and aft polacca-masted schooner; her masts fitted with joints near the deck, so that they can be lowered down should occasion require it; she is also fitted with a telescope funnel.

Immediately after leaving Tilbury-wharf her commander put her obedience to the helm to a severe test by steering a course in the form of the letter S through a fleet of shipping that lay at anchor off Gravesend, and the manner in which she steered was most satisfactory. She then proceeded at moderate speed to the Nore Light, working at 15lb. pressure, at a speed to the vessel of 10.6 knots, of the screw 14.5, with two knots of flood tide against her, and an estimated slip of two knots—making an average of 12 knots an hour.

She was abreast of the Nore at 1h. 55m. 25s., just at high water, and then proceeded on her trial to the Mouse Light-vessel, $7\frac{3}{4}$ nautical miles distant. In the middle of the trial she was working at 18lb. pressure, and the screws making 106 revolutions per minute; her engines,

also made by Mr. Dudgeon, worked beautifully. The Mouse Light was reached at 2h. 27m. 6s., exactly in 31 minutes 43 seconds. She left the Mouse Light for the Nore at 2h. 29m. 28s., and reached the latter at 3h. 18m. 40s.; she was 15 minutes detained on this passage by the port engine bearing getting heated, which would leave her passage up, against the first of ebb, at 34 minutes; an average of 14 nautical miles per hour from a new vessel.

After leaving the Nore, on her passage up the river, Mr. Dinon subjected her to the following trials:—1st trial. Turning ahead with both engines full speed, then taking a bearing from the shore, putting the helm hard over, and noting the time she took to describe a circle—three trials. Mean time occupied in describing the circle, 3 minutes 13 seconds. 2nd trial.—Keeping a course of full speed, then easing and stopping one screw, keeping the other at full speed, the helm then being put hard over to note the time she took in describing a circle. Time occupied, 3 minutes 26 seconds. 3rd trial.—On a course at full speed, then backing one screw astern full speed, keeping the other at full speed ahead, with the helm hard over to see what time she would take in describing a circle. Time occupied, 2 minutes 34 seconds. 4th trial.—Stopping both engines and screws; starting from a state of rest; turning one screw ahead full speed and the other screw astern full speed, noting the time she took to describe a circle. Time occupied, 4 minutes 2 seconds. In this last trial she turned on her own centre in a manner that excited much astonishment.

MEETINGS FOR THE ENSUING WEEK.

- MON. ...Medical, 8½. Lettsomian Lecture. James Bird, M.D., "Private Hygiene: Man's Intrinsic Predisposition to Health or Disease; and the Climateric Action of Hygiene Modifiers on the Vitality of his Organism."
Royal Asiatic, 3.
British Architects, 8.
- TUES. ...Statistical, 8.
Ethnological, 8. 1. Mr. Thomas Wright, "Report on the Ethnological Papers read at the Meeting of the British Association at Cambridge." 2. Captain R. Burton, H.M. Consul at Fernando Po, "Account of a Visit to the Fans." 3. Mr. T. Wright, "On the Human Remains found in the Excavations at Wroxeter."
Civil Engineers, 9. Discussion upon Mr. Crawford's Paper on "The Railway System of Germany."
- WED. ...Society of Arts, 8. Opening Address by Sir Thomas Phillips, F.G.S., Chairman of the Council.
Geological, 8.
- THURS. ...Chemical, 8. 1. Mr. G. B. Buckton, "On some Reactions of the Organo-metallic Radicles." 2. Mr. E. Nicholson, "On the Specific Gravity of urine as a measure of its Solid Constituents."
Linnæan, 8. 1. Mr. A. Murray, "On the Development of Orthopterous and Hemipterous Insects." 2. Dr. W. C. McIntosh, "On the Hairs of the Shore-crab (*Carcinus Menas*)." 3. Dr. McIntosh, "Notes on the Food and Parasites of the Salmon of the Tay."

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

Dated 18th October, 1862.

809. R. Webster, Leeds—Imp. in means or apparatus for preventing or mitigating accidents arising from collisions of railway trains.
2810. E. Lord, Todmorden—Certain imp. in machinery for opening and cleaning cotton and other fibrous substances.
2811. H. Ledger and B. Williamson, Manchester—An improved substitute for tombstones, tablets, monuments, and other similar memorials or commemorative records.
2812. J. Bentley, Denton, Lancashire—Imp. in apparatus for forming and pressing felt hats.
2813. L. Jauth, Reichshoffen, France—Imp. in machinery or apparatus for polishing sheet iron or other metal.
2814. R. A. Brooman, 166, Fleet-street—Imp. in frames for doubling and twisting threads. (A com.)
2815. J. Fuller, Bishopsgate-street—An imp. in treating india rubber used on a wire or wires for insulating the same.
2817. W. Clark, 53, Chancery-lane—Imp. in apparatus for dredging. (A com.)
- Dated 20th October, 1862.*
2818. J. Tangye, Birmingham—Imp. in, or additions to, certain kinds of pulleys for raising heavy weights.

2820. R. A. Brooman, 166, Fleet-street—Imp. in transferring designs and prints produced by photography to stone or zinc. (A com.)

2824. J. B. Payne, Chard, Somersetshire—Imp. in machinery for the spinning, twisting, and doubling and laying of hemp, flax, and other fibrous substances.

2826. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in apparatus for boiling liquids and cooking or preparing food, applicable also as a night light. (A com.)

Dated 21st October, 1862.

2830. J. Byram, Moldgreen, near Huddersfield—Imp. in lamps for the combustion of paraffin, rock oil, or other oils.

2832. C. G. Clarke, jun., Owthorn, near Hull—Imp. in garden shears.

2834. J. T. Cooke, Leicester—Imp. in battens for weaving.

2836. G. T. Bousfield, Loughborough-park, Brixton—Imp. in the manufacture of boots and shoes. (A com.)

2838. G. Haseltine, 100, Fleet-street—Imp. in the mode of, and in machinery for manufacturing nails, brads, and other similar articles. (A com.)

[From Gazette, November 7th, 1862.]

Dated 11th July, 1862.

1298. W. Ashton, Manchester—Certain imp. in machinery employed in the manufacture of braids and similar articles, parts of which improvements are also applicable to machinery used in spinning fibrous substances.

Dated 27th August, 1862.

2373. J. A. Coffey, 4, Providence-row, Finsbury-square, and T. Redwood, 19, Montague-street, Russell-square—Imp. in the manufacture of salts of ammonia and other products from the ammoniacal liquors of gas works and animal charcoal works, and in the still or apparatus to be used in such manufacture.

Dated 25th September, 1862.

2611. R. Alexander, Islington, Liverpool—Imp. in mariners' compasses.

Dated 13th October, 1862.

2760. E. B. Wilson, Parliament-street, Westminster—Imp. in apparatus employed in the manufacture of iron and steel.

Dated 15th October, 1862.

2776. E. Molyneux, jun., Meavien Eniskerry, Wicklow, Ireland—An improved carriage, with a travelling railway attached.

2778. J. H. Jenkinson, Manchester—Certain imp. in drinking fountains.

Dated 16th October, 1862.

2795. F. Delmas, 9, Cloak-lane—A rain absorber.

2802. E. Nelson, 13, Johnson's-place, Ranelagh-road, Thames-bank—Imp. in the manufacture of apparatus for heating and superheating steam and air without decomposition.

Dated 20th October, 1862.

2819. G. Haseltine, 100, Fleet-street—Imp. in forging cannon and other heavy articles. (A com.)

2821. J. Clark, Buchanan-street, Glasgow—Imp. in the means of applying railway brakes.

2822. N. R. Hall, Rosherville, Northfleet, Kent, and M. L. Parnell, Strand—Imp. in the construction of thermometers.

2823. W. A. Turner, Lawrence Pountney-lane, and T. T. Coughin, King's-place, Stones'-end, Borough—Imp. in apparatus for measuring cloths and other fabrics, parts of which are also applicable to indicating distances travelled by vehicles.

2825. H. L. Emery, 72, Sloane-street—Imp. in propelling machinery actuated by the application of animal power.

Dated 21st October, 1862.

2828. W. Tristram, Bolton—An improved method of, and apparatus for, preparing and dressing yarns or threads to be employed as warps.

2829. W. H. Tucker, 181, Fleet-street—Imp. in self-closing apparatus for doors.

2831. S. Whitham and T. Wright, Wakefield—Imp. in the manufacture of iron and steel, and in the apparatus employed for that purpose.

2833. C. Clark, 361, City-road—Imp. in cigar tubes, and in cigar and pipe mouth pieces.

2835. R. A. Brooman, 166, Fleet-street—Imp. in waterproofing, and in recovering products employed therein. (A com.)

2837. J. Duke and J. Clever, Puriton, Somersetshire—Imp. in the manufacture of cement.

2839. F. Tolhausen, 17, Faubourg Montmartre, Paris—An improved machine for raising, lowering, removing, and carrying buildings, monuments, and ships or vessels. (A com.)

Dated 22nd October, 1862.

2841. G. Clark, 30, Craven-street, Strand—Imp. in the construction, protection, and armament of ships, vessels, and floating batteries, some of which improvements are applicable to land batteries and forts.

2842. J. Spence, Portsmouth—Imp. in non-conducting compositions for preventing the radiation or transmission of heat or cold, and in coating metallic or other surfaces therewith.

2844. E. Fielding, Willow Bank, near Todmorden—Imp. in the manufacture of headlamps, and in the machinery employed therein.

2845. H. Wilde, Manchester—Imp. in electro-magnetic telegraphs.

2846. H. H. Kromschroeder and J. F. G. Kromschroeder, Princess-terrace, Regent's-park—Imp. in the manufacture of gas meters, and in the manufacture of sheet metal suitable for gas meters.

2847. E. W. Hughes, 28, Great George-street, Westminster—Imp. in turn-tables and turn bridges.
2848. T. Fearn, Birmingham—Imp. in the manufacture of rods, poles, tubes, and other forms employed in the construction of various articles of furniture, and for other similar purposes.
2849. T. Greenwood, Leeds—Imp. in machinery for preparing to be spun flax, hemp, tow, silk waste, China grass, and other fibrous substances.
2850. V. Orłowski, Spring-gardens, Worcester—Imp. in motive power carriages.

Dated 23rd October, 1862.

2852. W. S. Gamble, Frederick-street, Caledonian-road, Islington—An improved salinometer.
2854. J. Turnbull, Barnard Castle, Durham—Imp. in mills for grinding grain.
2856. E. Bath, Swansea—Imp. in treating alkali waste to obtain sulphur therefrom.
2858. H. Rec, Hamburg—Imp. in apparatus for exercising the human body.
2860. E. H. Carbutt and G. A. Clough, Bradford—Imp. in power hammers.
2862. R. A. Brooman, 166, Fleet-street—Imp. in tanning. (A com.)

Dated 24th October, 1862.

2864. C. C. Burmeister and W. Wain, Copenhagen, Denmark—Imp. in the construction of 'cupolas,' and in apparatus connected therewith, for naval or other war purposes.
2866. J. Gimson and R. Flude, Leicester—Imp. in looms for weaving narrow fabrics.

Dated 25th October, 1862.

2870. J. A. Nicholson, Gracechurch street—Imp. in lead, crayon, and other pencils.
2872. A. Clark, Brighton—Imp. in the construction of bows and pendants of watches.
2882. J. P. Bourquin, Newman-street, Oxford-street—An improved manufacture of mount for photographic and other albums, miniatures, and other pictures.

Dated 27th October, 1862.

2884. J. H. Johnson, 47, Lincoln's Inn-fields—Imp. in rotatory engines.
2890. F. L. H. W. Bunge, 5, Gloucester-place, Brixton-road—Imp. in self-acting apparatus for discharging the water resulting from the condensation of steam. (A com.)
2892. P. E. Placet, Paris—An improved process of engraving.
2894. A. Peck, Manchester—Imp. in apparatus for evaporating saccharine and saline solutions.
2896. J. Howie, Hurlford, Ayr, N.B.—Imp. in machinery or apparatus for regulating the supply of solid or liquid bodies to mills, or other apparatus used in mixing or preparing plastic matters.

Dated 28th October, 1862.

2898. E. Hooper, Southampton—Imp. in roofing tiles.
2900. E. Tatham and A. Tatham, Ilkeston, Derbyshire—An imp. in warp machines for the manufacture of looped fabrics.
2906. T. Sutton, St. Brelade's Bay, Jersey—Imp. in preparing albumenized paper for photographic purposes.

Dated 29th October, 1862.

2916. W. E. Evans, 8, Newton-terrace, Bayswater—Imp. in apparatus for playing organs, harmoniums, pianos, and other similar keyed instruments, and also improvements in reed musical instruments.
2918. W. E. Gedge, 11, Wellington-street, Strand—Imp. in looms for weaving. (A com.)
2920. J. Head, New Swindon, Wiltshire—Imp. in machinery employed when cultivating land by steam power.
2922. F. L. Stott, Rochdale—Imp. applicable to mechanism or apparatus for warping yarns or threads.

INVENTION WITH COMPLETE SPECIFICATION FILED.

2935. G. Haseltine, 100, Fleet-street—Imp. in horse-shoe machines. (A com.)—30th October, 1862.

PATENTS SEALED.

[From Gazette, November 7th, 1862]

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| <i>November 7th.</i> | 1429. A. B. Freeland. |
| 1387. G. F. Greiner and J. H. C. Sandilands. | 1435. P. M. Lopez. |
| 1403. W. Clark. | 1447. W. Southwood. |
| 1404. R. Moore. | 1457. E. Whittaker and J. Clare |
| 1405. R. Moore. | 1469. G. H. Birkbeck. |
| 1406. J. T. Cooke. | 1427. J. Wright. |
| 1409. J. House. | 1485. A. L. Thirion. |
| 1416. J. Milnes. | 1518. M. A. F. Mennons. |
| 1417. G. Fuhrmann. | 1527. J. Kennedy. |
| 1421. H. S. Firman. | 1539. J. Oxley. |
| 1424. H. Cartwright. | 1616. W. Perks, jun. |
| 1425. W. N. Hutchinson. | 1827. B. Fabbriotti. |
| 1426. C. J. Neale. | 2077. T. Meriton. |
| 1427. H. Ashworth. | 2145. Z. Colburn. |

[From Gazette, November 11th, 1862.]

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| <i>November 11th.</i> | 1554. P. McGregor. |
| 1453. R. A. Brooman. | 1565. J. Harrison & R. Parkinson. |
| 1456. A. Smith. | 1566. W. Harrison, J. Harrison, J. Oddie, & W. Parkinson. |
| 1459. J. Smith, sen. | 1595. C. H. Hudson. |
| 1468. W. Sissons. | 1631. H. P. Burt. |
| 1470. J. Stone. | 1645. H. Watson & J. Millbourn. |
| 1474. C. Tress. | 1655. J. King and J. Partington. |
| 1475. I. Baggs and W. Simpson. | 1670. G. Gurney. |
| 1477. A. Watney. | 1708. A. V. Newton. |
| 1482. R. Laming. | 1763. W. E. Newton. |
| 1486. F. B. Anderson. | 1764. W. E. Newton. |
| 1493. B. Sharpe. | 1911. W. E. Newton. |
| 1494. A. V. Newton. | 2093. C. J. Keene. |
| 1495. A. V. Newton. | 2343. C. Monson. |
| 1500. J. Hogg, jun. | 2345. E. S. Ritchie. |
| 1501. J. Broadley. | 2488. F. Hands and H. Holland. |
| 1507. J. C. Gore. | 2602. W. Clark. |
| 1517. A. V. Newton. | |
| 1551. W. Roberts & T. Greenacre. | |

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[From Gazette, November 11th, 1862.]

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| <i>November 3rd.</i> | <i>November 6th.</i> |
| 2518. J. Chesterman. | 2553. E. T. Hughes. |
| 2546. J. Hamer. | <i>November 7th.</i> |
| <i>November 4th.</i> | 2567. R. Lansdale. |
| 2526. W. Mannix. | <i>November 8th.</i> |
| 2543. G. Hadfield. | 2538. A. Leach. |
| | 2563. T. Blinkhorn. |

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[From Gazette, November 11th, 1862.]

- November 5th.*
2582. C. Crum and C. Paul.

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Commissioners of Patents' Journal...	"	Civilisation considered as a Science, George Harris, F.S.A.	"
The National Defences, by G. P. Bidder, jun., M.A.; with an Abstract of the Discussion upon the Paper, and an Appendix, edited by C. Manby, F.R.S., and J. Forrest	Institution of Civil Engineers.	Jabüchern für Volks- und Landwirtschaft, Vol. vii., Vol. viii., parts 1 and 2	"
Plan of Nottingham, by F. Jackson	The Designer.	Catalogue of the Current Coins of all Countries in the International Exhibition, by J. Yates, M.A., F.R.S. (50 copies).....	"
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Twenty-fifth Annual Report of the Art Union of London, 1861.....	Art Union.	Official Classified and Descriptive Catalogue of the Contributions from India to the London Exhibition of 1862	Dr. Forbes Watson.
Dictionary of Universal Information, by S. O. Beeton	The Author.	Memoirs of the Literary and Philosophical Society, Manchester, Vol. i., Third Series	Society.
Transactions of the Royal Scottish Society of Arts. Vol. vi., part 1.	Society.	Proceedings of ditto, Vol. ii., 1860-61, 1861-62	"
Dictionnaire de Chimie Industrielle, Vol. ii., part 1, by MM. Barreswil et Aimé Girard.....	The Authors.	Transactions of the Institute of Naval Architects, 1861, Vol. ii.....	Institute. Office.
Catalogue Raisonné; or a List of the Pictures at Blenheim Palace, by George Scharf, F.S.A.	The Author.	Geological Survey of India	J. G. Knight, Commissioner for Victoria.
Statistical Register of South Australia	G. S. Walters.	Catalogue of the Victorian Exhibition of 1861	
Memoirs of the Geological Survey of India, Vol. iii., part 1	Geological Survey Office.	Statistical Register of Victoria to 1855	James Gilbert. Commissioners for Norway.
Annual Report of the Geological Survey of India, and Museum of Geology, 1860-61	"	Victorian Government Prize Essays, 1860	
Memoirs of the Geological Survey of India. I. The Fossil Cephalopoda of the Cretaceous Rocks of Southern India (Belemnitidæ nautilidæ), by Henry F. Blandford,	"	Statistical Notes on the Progress of Victoria, 1835 to 1860.....	Sir W. H. Holmes, Commissioner for British Guiana.
Catalogue of the Library of the Corporation of London.....	Corporation of London.	Ince and Gilbert's outlines of English History	
Catalogue of the New South Wales Department of the International Exhibition of 1862	Edward Hamilton.	The Vegetable Products of Norway	A. Cambra, Commissioner for Brazil.
Transactions of the Historic Society of Lancashire and Cheshire. Vol. xiii., 1860-61	Society.	Descriptive Catalogue of the Collection sent from the Island of Trinidad to the International Exhibition, 1862	
Experimental Investigation of the laws which govern the propagation of the electric current in long sub marine telegraph cables, by Rutimer Clark	The Author.	Do. do., from British Guiana	A. Andrews, Commissioner for W. Australia
Minutes of Proceedings of the Institution of Civil Engineers, Vol. xix.	Institution.	Free Cotton: How & where to grow it	
Bericht über die Allgemeine Agricultur und Industrie-Ausstellung zu Paris im Jahre, 1855.....	Chevalier de Schwarz.	Descriptive Catalogue of the Brazilian Department of the International Exhibition, 1862	F. S. Dutton, Commissioner for S. Australia.
Rise and Progress of Painting, by E. E. Antrabus, F.S.A.	The Author.	Do. do. of the West Australian Department	
Description of Ancient Marbles, p. xi.	Trustees of the British Museum.	Do. do. of the South Australian Department.....	A. J. Langley, Commissioner for Vancouver's Island.
Select Papyri, p. ii., plates 1-19.....		Do. do. of the Vancouvan Department	
Notices sur les modèles, Cartes et Dessins. Exposition Universelle de 1862. Empire Français.....	Le Baron Baude.	Do. do. of the Spanish Department	Commissioners for Spain.
Monographie de l'Île Maurice, translated into French from the Paper read by Mr. Morris before the Society of Arts, 12th March, 1862, by M. Clément J. A. Ulecoq.	James Morris.	Do. do. of the Italian Department	
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Relatorio sobre a Exposição Universal de Paris. Machinas de vapor, Vol. i. and ii.	"	Journal of Proceedings of Linnæan Society, Vol. vi., Nos. 22—24 ...	"
Do. do. do., Agricultura, Vol. i. and ii.	"	Transactions of, ditto, Vol. xxiii., part 2, 1861	"
Do. do. do. Artes Chemicas, Vol. i. and ii.	"	Quarterly Journal of the Statistical Society, Vol. xxiv., No. 4; Vol. xxv., Nos. 1—3	"
Relatorio de Commissario Regio junto á Commissao Imperial da Exposição Universal de Paris, Vol. i. and ii.	"	Proceedings of the Royal Society, Vol. xi., Nos. 47, 48; Vol. xii., Nos. 49—51	"
Catalogue of the Belgian Products in the International Exhibition, 1862.	C. Degrelle, Commissioner for Belgium.	Journal of the Chemical Society for 1862	"
Report of the Meeting of the British Association for the Advancement of Science, held at Manchester, 1861	Dr. J. Phillips, M.A., F.R.S.	Canadian Naturalist and Geologist, Vol. vii., Nos. 1—4.	Montreal Natural History Society.
Report of Yorkshire Union of Mechanics' Institutions, at Twenty-fifth Annual Meeting	Institution.	American Journal of Science and Art, Nos. 96—101	B. Siliman.
Forty-second Annual Report of the Trustees of the New York State Library, 1860	New York State Library.	Journal of the Royal Agricultural Society, Vol. xxii., No. 2; Vol. xxiii., No. 1	Society.
Forty third, ditto, ditto, 1861.....	"	Papers read at the Royal Institute of British Architects, 1861—62.	Institute.
Guide to the Geology of New York, and to the State Geological Cabinet	"	Journal of the Royal Asiatic Society, Vol. xix., No. 4; Vol. xx., No. 1.	Society.
Twelfth Annual Report of the State of New York on the Condition of the State-Cabinet of Natural History, 1859	"	Proceedings of the Institution of Mechanical Engineers for 1862...	Institute.
Thirteenth, ditto, ditto, 1860.....	"	Canadian Journal of Industry, Science, and Art, Nos. 36—40. ...	Canadian Institute.
Fourteenth, ditto, ditto, 1861.....	"	Memoirs of the Royal Astronomical Society, Vol. xxx., 1860—61.	Society.
Seventy-third Annual Report of the Regents of the University of the State of New York, 1860	"	Proceedings of the Society of Antiquaries, Session 1861—62.	"
Seventy-fourth, ditto, ditto, 1861 ...	"	Horological Journal for 1862.....	{ Horological Institute.
Journal of the National Life-Boat Institution for 1862.....	Institution.	Presse Scientifique des Deux Mondes; Revue Universelle du Mouvement des Sciences pures et appliquées, Vols. i., ii., iii., 1862.	Publishers.
Address delivered at the Anniversary Meeting of the Geological Society of London, by Professor T. Huxley, Feb., 1862	Society.	The Thirty-fourth Annual Report of the Royal Scottish Academy of Painting, 1861	Council of the Academy.
Quarterly Journal of the Geological Society, Vol. xviii., Nos. 1—4.	"	The Essentials of a Healthy Dwelling, and the Extension of its Benefits to the Labouring Population, by Henry Roberts, F.S.A.	The Author.
Pharmaceutical Journal for 1862 ...	"	The Theory of Vital Force applied to the Cure of Disease, by E. Haughton, M.D.	"
Journal of the Royal United Service Institution, Vol. v., No. 20; Vol. vi., Nos. 21—23	Institution.	The Dictionary of Calico Printing and Dyeing, by Charles O'Neill, F.C.S.	"
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Cosmos.		Par MM. Les Secrétaires Perpetuels.	Pract. Mechanics' Journal.
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